

Chapter 8

Changed Circumstances, Remedial Measures, and Adaptive Management

This chapter describes the conservation measures that may be subject to modification as a result of changed circumstances and that could require implementation of remedial measures should changed circumstances occur. This chapter also defines and describes adaptive management and the adaptive management process.

8.1 Changed Circumstances and Remedial Measures

ASIPs are required to address circumstances that might change over the permit term and provide remedial measures to address these changes. *Changed circumstances* are reasonably foreseeable circumstances that could affect a covered species or geographic area covered by the ASIP. Remedial measures differ from adaptive management in that *remedial measures* are predetermined actions that must be taken in the event of a changed circumstance. *Adaptive management*, by definition, does not include predetermined actions but rather identifies new responses based on the outcome of management.

The changed circumstances for which DWR and Reclamation are required to implement remedial measures are identified in Table 8-1. Any other circumstances that occur during the permit term are considered unforeseen.

8.2 Adaptive Management

8.2.1 Existing Adaptive Management

There are currently several groups and forums that oversee and contribute to the adaptive management of species. These groups use information collected during monitoring and other studies to determine SWP and CVP operations, the EWA, and other programs.

8.2.2 SDIP ASIP Adaptive Management

As described in Chapter 2, a federal and state interagency team will be convened to discuss constraints and provide input to the existing Data Assessment Team (DAT). The Gate Operations Review Team will make recommendations for the operations of the fish control and flow control gates to minimize impacts of resident threatened and endangered species and to meet water level and water quality requirements of south Delta water users. The interagency team will include representatives of DWR, Reclamation, USFWS, NOAA Fisheries, and DFG, and possibly others as needs change. The interagency team will meet through a conference call, approximately once a week. DWR will be responsible for providing predictive modeling, and will provide operations forecasts and the conference call line. Reclamation will be responsible for providing CVP operations forecasts, including San Joaquin River flow, and data on current water quality conditions. Other members will provide the team with the latest information related to south Delta fish species and conditions for crop irrigation.

No additional measures related to adaptive management are included in this ASIP for Stage 1 of the SDIP. The OCAP BOs identify adaptive management measures for ASIP-covered fish species; therefore, these measures are not included in this ASIP. No adaptive management measures were identified for covered wildlife or plant species or natural communities.

In the future, adaptive management measures may become required as a result of the listing or delisting of ASIP-covered species or changes in status of these species. Adaptive management may also be triggered if a species not covered in this ASIP is listed. In either case, DWR and Reclamation will need to reinitiate consultation with the resource agencies.

Results of SDIP effectiveness monitoring and relevant monitoring and research will be used to determine the effectiveness of these conservation measures in minimizing impacts on ASIP-covered fish species. Based on this assessment of monitoring and research results, the conservation measures may be modified to improve their effectiveness. Modifications to the conservation measures may be proposed by DWR, Reclamation, USFWS, NOAA Fisheries, or DFG. The process for adaptively managing implementation of the conservation measures is described below.

- 1. Assessment of Effectiveness of Conservation Measures.** As described in Chapter 7, “Monitoring Program,” DWR and Reclamation will prepare annual monitoring reports that include an analysis of monitoring results to determine the effectiveness of conservation measures. Monitoring reports will be submitted to the CBDA and the resource agencies for review.
- 2. Recommendations for Modifying Conservation Measures.** Based on the analysis of SDIP monitoring results, DWR and Reclamation may propose modifications to the conservation measures to improve their effectiveness. The resource agencies will be notified in writing of the proposed modifications and will review the proposed modifications, including the

supporting data analyses. If the resource agencies concur with the proposed modifications, they will be implemented. The resource agencies will notify DWR and Reclamation if the proposed modifications will require an amendment to the SDIP BO or the take authorization, or if another process may be required to implement the modifications.

The resource agencies, based on review of SDIP monitoring results or results of others, may also recommend modifications to the conservation measures. The resource agencies will submit proposed modifications to DWR and Reclamation for review. If DWR and Reclamation concur with the proposed modifications, they will be implemented. The resource agencies will notify DWR and Reclamation if the proposed modifications will require an amendment to the SDIP BO or the take authorization, or if another process may be required to implement the modifications.

- 3. Revisions to the Monitoring Program.** If conservation measures are modified, the SDIP monitoring program will be revised to provide for monitoring and research to test the effectiveness of the modified conservation measures.